

REMARKS

Applicant thanks the examiner for his attention to the application.

Claims 1, 3-12, 15-22, 24-30, 37 and 38 are pending in the application. All claims stand rejected under the art. Claims 1, 3-9, 11-12 and 24-30 and 37,38 stand rejected as being anticipated under 35 USC §102 by Shuert (5,401,347). Claim 10 stands rejected as being obvious under 35 USC §103 over Shuert. Claims 15-22 stand rejected as being obvious under 35 USC §103 over Shuert in view of Heil.

The examiner argues that Shuert teaches undulating mating surfaces that conformally interdigitate “without any spaces in the regions of interdigitation” and mating surfaces with undulations defined by wave fronts that extend parallel to two different axes as provided at the claims. It is not clear where and/or how the examiner finds undulating/wave-shaped surfaces at Shuert or where and how these undulating/wave-shaped surfaces conformally mate.

In spite of the examiner’s assertion that the definition of a wave may vary between dictionaries and that waves come in different sizes and shapes, Shuert in fact discloses no mating surfaces that exhibit undulating or wave-shaped characteristics. Instead and except for the intermittent bosses, Shuert’s facing surfaces are substantially flat. Flat surfaces do not represent a wave or exhibit periodic/cyclic undulations and are distinguishable from the earlier and currently amended claims.

In the foregoing regard and with attention to the attached marked-up figures 7 and 19 of Shuert, only flat surfaces having frustum shaped bosses that rise from the flat surfaces are disclosed. The organization of the bosses is such that the only contact between Shuert’s mating pallet surfaces occurs at the points of tangency between the

tapered sides of the overlapping bosses and the flat top surfaces of the bosses (**shown in red**). All other regions are **flat** as representatively shown in **yellow**.

Not only therefore doesn't Shuert disclose wave shaped surfaces, Shuert's pallet is replete with spaces and gaps that occur around and in between the rows of bosses. In contrast, Applicant's claimed undulating surfaces exhibit no spaces or gaps or flat non-undulating surfaces in the areas of conformal interdigitation.

The use of "wave" at the claims comports with the provided definition and the attached additional definition. The **normal** use of wave excludes the flat/frustum structure described and disclosed in Shuert. Therefore the earlier presented and currently amended claims are believed distinguishable over Shuert alone or in combination with Heil.

Applicant also encloses definitions to the normal meaning to the terms "undulation", "sinusoidal", and corrugated and all of which terms are alternatively used at the amended claims to define applicant's invention. These terms all comport with applicant's invention as described and shown at the specification and drawings. The terms are used to directly define and distinguish the invention and not inferentially draw on the specification as the claims are read.

If the examiner believes other definitions of wave, undulation, corrugation and/or sinusoidal exist that include Shuert's structure, the examiner is requested to provide same. The mere assertion and unsupported allegation that other definitions exist without any support to demonstrate that such phantom definitions encompass Shuert's structure shape is otherwise believed improper. The wording of applicant's prior and currently amended claims defines and distinguishes applicant's invention from Shuert.

In further regard to Shuert, Shuert (5,401,347) discloses alternative thermoformed (i.e. vacuum formed) pallets 10 and 12 having a first sheet with a flat outer surface. The pallet 10 includes bosses 14b and 16b and the pallet 12 includes bosses 30b and 32b. A tangential contact is taught between the bosses 14b and 16b, see the specification at column 4, line 37 through column 5, line 27, the top views of Figures 7 and 8 and the cross section views 2-4 and 6.

A tangential contact is also taught for the pallet 12 between the bosses 30b and 32b at column 5, line 38 through column 6, line 35. Lines 59-61 at column 5 of Shuert particularly state that the same intermeshing occurs between the bosses 30b and 32b as described with respect to the pallet structure 10. In regard to the referenced pallet 12, see also the related top view at Figure 19 and cross section views 11, 12, 14, 15, 17 and 18.

Hollow spaces or openings (e.g. 28) otherwise are provided between the rows of intermeshed bosses of both of Shuert's pallets 10 and 12.

Shuert particularly teaches **frustum or coffee cup shaped bosses** that project from the bottom of a top layer and the top of a bottom layer. The layers are stacked or interdigitated with the conical sides of the projections touching at points of tangency along tapered conical sides of the protrusions. The flat bottoms and tops of the bosses contact the flat portions of the top and bottom layers. The tangential, sidewall contact between the bosses is particularly apparent from the top views of figures 7 and 19. The contact between the flat portions of the bosses and flat surfaces of the sheets and the tangential contact between the bosses is further apparent from the cross section views 4, 11, 12, 14, 15 – 18. **In short, Shuert provides substantial hollow spaces where the**

bosses 14b and 16b and 30b and 32b are not in contact with each other between the sheets 14 and 16 and 30 and 32.

The bosses also exhibit distinguishable configurations from applicant's interior surfaces. That is and in contrast and as shown at Figure 4 and elsewhere in the subject application, applicant's claimed blow molded pallets provide undulating, wave-shaped or corrugated inner surfaces. The humps 36 and valleys 58 of each undulation or wave and/or ridges 52 and grooves 48, formed along the length of a single wave, are molded to complementary shapes, such that upon interdigitation, each depending undulation or wave from the first portion substantially and conformally mates with each complementary wave from the second portion in all regions of interdigitation or overlap.

Independent claims 1, 11, 15 and 26 have variously been amended to distinguish applicant's cyclical undulating/sinusoidal undulating/undulating arcuate channels and protrusions/corrugated surfaces and whereby, the lack of spaces in the regions of interdigitation and the undulating/wave-shaped/corrugated configurations of applicant's inner surfaces.

The amended claims further define Applicant's novel and distinguishable use of the undulating pallet surface of the one portion as a mold for the mating pallet portion. That is, applicant uses the inner surface of the one pallet portion as the molding surface for the adjoining inner surface and which undulating surfaces provide an enhanced bonding between the pallet portions which is especially important in regard to the supported loads and normal abuse a pallet must withstand.

The amended claims further distinguish applicants novel forming of secondary undulations (i.e. ridges 52 and grooves 48) within each primary undulation or wave and as claimed at the dependent claims (e.g. claims 8, 28, 29, 37 and 38).

Heil is cited for showing a blow-molded pallet and from which the examiner argues it would have been obvious to apply a blow molding process to form the pallet of Shuert. The examiner's assertions, however, appear to arise from a hindsight reconstruction, using applicant's application as a teaching guide.

That is, Heil, at col. 5, lines 59-66 merely references blow molding as a possible molding technique to form his relatively simple pallet. No disclosure is provided at Heil to the configuration of the internal construction of his pallet. In particular nothing discloses or suggests that Heil's interior surfaces are in contact with each other and/or that the surfaces exhibit undulating shapes that are interdigitated without spaces, gaps or flats in conformal contact as applicant claims.

The applicability of molding Shuert's pallet using the brief suggestion of Heil is therefore not believed supported from the references in view of the lack of any disclosure, suggestion, inference or any other motivation at Shuert or Heil to this end.

The applicability and asserted combination of Heil with Shuert is further questioned, since any such combination would require undue experimentation to arrive at either the structure disclosed at Shuert or applicant's distinguishable structure. Heil alone and/or in combination with Shuert therefore does not teach, suggest or provide any inference or motivation to arrive at applicants' claimed pallets. Neither the configuration of an undulating, wave-shaped and/or corrugated inner surface nor the interdigitation

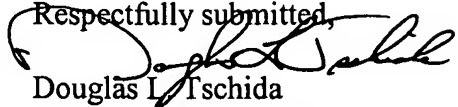
with a complementary wave-shaped surface is disclosed, suggested or to be inferred or is any motivation thereto provided from Shuert and/or Heil.

Independent claims 1, 11, 15 and 26 have been amended using alternative phraseology to distinguish the configurations of applicant's mating inner pallet surfaces and the conformal interdigitation that exists at the mating inner surfaces. The claims particularly distinguish the surfaces using the terms cyclical undulations, sinusoidal undulations, undulating arcuate channels and protrusions, and corrugations. Such surfaces when conformally interdigitated do not produce any spaces, gaps or flats as shown in the cited art. Moreover, the mating surfaces enhance the strength of the pallet. Additional novel features, partially discussed above, are provided at the dependent claims to further distinguish the related combinations of applicant's invention.

The amended claims should no longer be objectionable over Shuert and/or Heil and should therefore be allowable. No new matter has been entered with any of the foregoing amendments. Applicant requests the examiner's reconsideration and passage of the application to allowance and an early notice thereto. Prior to entry of any further action not containing allowable claims or subject matter, applicant also requests an opportunity to discuss the claims with the examiner.

If any matters remain that can be handled with a telephone conference, the examiner is encouraged to contact the undersigned.

Respectfully submitted,



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Enclosures